

24. A mutant host cell of Claim 23 comprising recombinant DNA coding for one or more of the enzymes selected from the group consisting of transketolase, transaldolase and phosphoenolpyruvate synthase such that the mutant host cell expresses transketolase, transaldolase or phosphoenolpyruvate synthase at enhanced levels relative to wild-type host cells.
25. A mutant host cell of Claim 23 further modified to reduce or eliminate pyruvate kinase activity in said host cell.
26. A mutant host cell of Claim 24 further modified to reduce or eliminate pyruvate kinase activity in said host cell.
27. A method for increasing PEP availability to enhance carbon flow into a metabolic pathway utilizing PEP as a precursor or intermediate of a host cell capable of utilizing a phosphotransferase transport system for carbohydrate transport, the method comprising:
- (a) selecting a host cell characterized by:
    - having a Pts<sup>-</sup>/glu<sup>+</sup> phenotype;
    - requiring galactose permease activity to transport glucose; and
    - having a specific growth rate on glucose as a sole carbon source of at least about 0.4h<sup>-1</sup>; and
  - (b) culturing the host cell in the presence of an appropriate carbon source.
28. A method of Claim 27 wherein the Pts<sup>-</sup> phenotype is caused by the deletion or inactivation of all or substantially all of one or more gene(s) selected from the group consisting of *ptsI*, *ptsH* and *crr*.
29. A method of Claim 27 further comprising modifying the selected host cell to introduce therein recombinant DNA coding one or more of the enzymes selected from the group consisting of transketolase, transaldolase and phosphoenolpyruvate synthase such that the mutant host cell expresses transketolase, transaldolase or phosphoenolpyruvate synthase at enhanced levels relative to wild-type host cells.

30. A method of Claim 27 further comprising modifying the selected host cell to reduce or eliminate pyruvate kinase activity in said host cell.

Sub 31. A method of Claim 30 wherein pyruvate kinase activity is reduced or eliminated in the host cell by introducing a mutation in DNA encoding one or more of the sequences coding for pyruvate kinase, pyruvate kinase promoter region and other regulatory sequences controlling expression of pyruvate kinase.

32. A method for enhancing biosynthetic production of a desired compound from a pathway in said host cell which utilizes PEP as a precursor or intermediate in a host cell, the method comprising:

(a) transforming a host cell characterized by:

- (i) being capable of utilizing a phosphotransferase transport system for carbohydrate transport;
- (ii) having a Pts-/glu+ phenotype;
- (iii) requiring galactose permease activity to transport glucose; and
- (iv) having a specific growth rate on glucose as a sole carbon source of at least about  $0.4h^{-1}$ ;

with recombinant DNA coding one or more enzyme(s) catalyzing reactions in the pathway of said host cell;

(b) culturing the host cell with an appropriate carbon source; and accumulating the desired compound.

Sub C3 33. A method of Claim 32 wherein the DNA used to transform the host cell encodes one or more enzyme(s) selected from the group consisting of DAHP synthase, DHQ synthase, DHQ dehydratase, shikimate dehydrogenase, shikimate kinase, EPSP synthase and chorismate synthase.

34. A method of Claim 32 further comprising transforming the host cell with recombinant DNA coding one or more enzyme(s) selected from the group consisting of transketolase, transaldolase and phosphoenolpyruvate synthase so that said enzyme is expressed at enhanced levels relative to wild-type host cells.

Sub E 35. A method of Claim 33 further comprising transforming the host cell with recombinant DNA coding one or more enzyme(s) selected from the group consisting of transketolase, transaldolase and phosphoenolpyruvate synthase so that said enzyme is expressed at enhanced levels relative to wild-type host cells.

Sub C47 36. A method of Claim 32 wherein the desired compound is selected from the group consisting of tryptophan, tyrosine and phenylalanine.

37. A method of Claim 36 wherein the desired compound is tryptophan and the host cell is transformed with DNA coding one or more gene(s) selected from the group consisting of *aroG*, *aroA*, *aroC*, *aroB*, *aroL*, *aroE*, *trpE*, *trpD*, *trpC*, *trpB*, *trpA* and *tktA* or *tktB*.

38. A method for obtaining Pts-/glucose+, galactose permease requiring-mutant cells, the method comprising:

- Sub C5
- (a) selecting a host cell which utilizes a phosphotransferase transport system;
  - (b) mutating the host cell by inactivating the phosphotransferase transport system by deleting or inactivating selected genes of said system;
  - (c) culturing in a continuous system the mutant cells using glucose as a carbon source; and
  - (d) selecting from mutant cells which grow on glucose at a specific growth rate of at least about  $0.4 \text{ h}^{-1}$ .

39. A method of Claim 38 wherein the mutant cells are selected due to a specific growth rate on glucose of at least about  $0.8 \text{ h}^{-1}$ .